

# DCW152R SERIES

Rail DC/ DC Converters Dual Output: 150 Watts



## General Specifications

|                                 |  |
|---------------------------------|--|
| <b>Input Voltage</b>            | <b>24VDC</b> ( 14.4 ~ 34 ) <b>36VDC</b> ( 22 ~ 51 )<br><b>48VDC</b> ( 29 ~ 67 ) <b>72VDC</b> ( 43 ~ 101 )<br><b>96VDC</b> ( 58 ~ 135 ) <b>110VDC</b> ( 66 ~ 154 )          |
|                                 | • Other voltages on request  |
| <b>Input Protection</b>         | Reverse polarity protection.<br>Inrush current limiting<br>Lower voltage than specified will not damage unit   |
| <b>Isolation</b>                | Input - Output 3000vdc<br>Input – Chassis 1500vdc<br>Output – Chassis 1500vdc  |
| <b>Efficiency</b>               | Model dependent , typically 80-90%   |
| <b>Output voltage</b>           | See tables   |
| <b>Output Power</b>             | 150 watts  |
| <b>Voltage Adjust.</b>          | Customer specified   |
| <b>Immunity</b>                 | EN50155 & EN50121-3-2<br>EN61000-4-2 ESD<br>EN61000-4-3 RF Immunity<br>EN61000-4-4 Fast Transients<br>EN50155 Surge & Voltage variations<br>EN61000-4-6 Conducted Immunity |
| <b>EMI</b>                      | EN5022 Class B Conducted & Radiated  |
| <b>Switching Freq.</b>          | 47kHz ±5kHz  |
| <b>Regulation</b>               | ±1% Line / Load combined both outputs  |
| <b>Dynamic Response</b>         | Max ±5% deviation for 10% - 50% load step with 1msec recovery  |
| <b>Ripple &amp; Noise</b>       | Typically 1% pk-pk or 0.2% RMS of output voltage ( 20MHZ BW )  |
| <b>Overload Protection</b>      | Current limiting, with hiccup type short-circuit protection  |
| <b>Overvoltage Protection</b>   | V1: Double regulator loop & Tranzorb across output   |
| <b>Operating Temp.</b>          | -25°C to +70°C cold plate temperature  |
| <b>Cooling</b>                  | Conduction cooling / Convection cooling  |
| <b>Environmental Protection</b> | Ruggedizing and Conformal coating of PCB.  |
| <b>Shock &amp; Vibration</b>    | IEC61373 Cat 1 A & B and Cat 2   |
| <b>Humidity</b>                 | 5-95% non-condensing, higher ration option   |
| <b>MTBF</b>                     | >150,000 hrs   |

## Features

- Designed to rail standards EN50155 & EN50121
- Rugged design for on-board train applications
- Wide input voltage range
- Convection / Conduction cooled: No fans
- Fully isolated input – output 3000VDC
- Over voltage protection
- Overload and short circuit protection
- MTBF > 150,000hrs
- Specials input / output combinations on request.

## Description

The **DCW152R** series dc/dc converters are designed for use on Rail Rolling Stock and for many extremely harsh environments.

This rugged, industrial quality DC/DC converter uses a field proven topology to generate up to 150W continuous power, depending on the input/output configuration (i.e. efficiency).

It is a mature design with a track record in hundreds of applications. The series has large design headrooms and it is rated for operation over a -25 to +70°C temperature range.

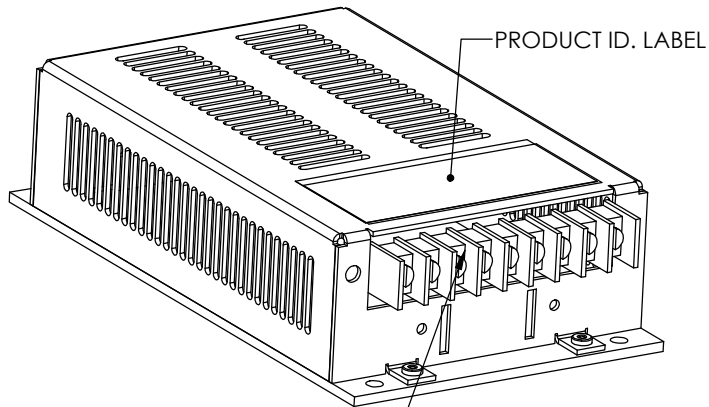
It is cooled by conduction via baseplate to a heatsinking surface and by natural convection. These models are fully ruggedized and conformal coated for immunity to shock, vibration, humidity, moisture, dust and insects.

This chassis-mount design is optimized for low component count and high efficiency. The use of components with established reliability results in a high demonstrated MTBF.

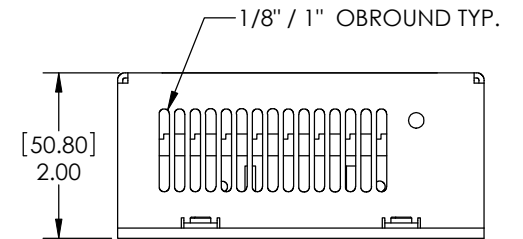
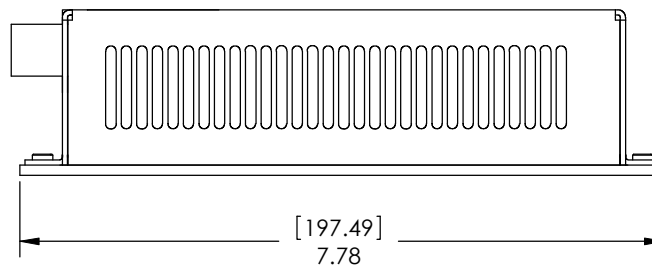
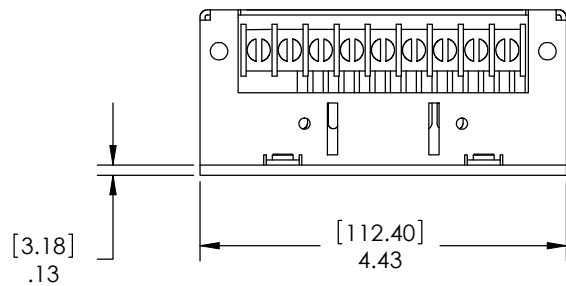
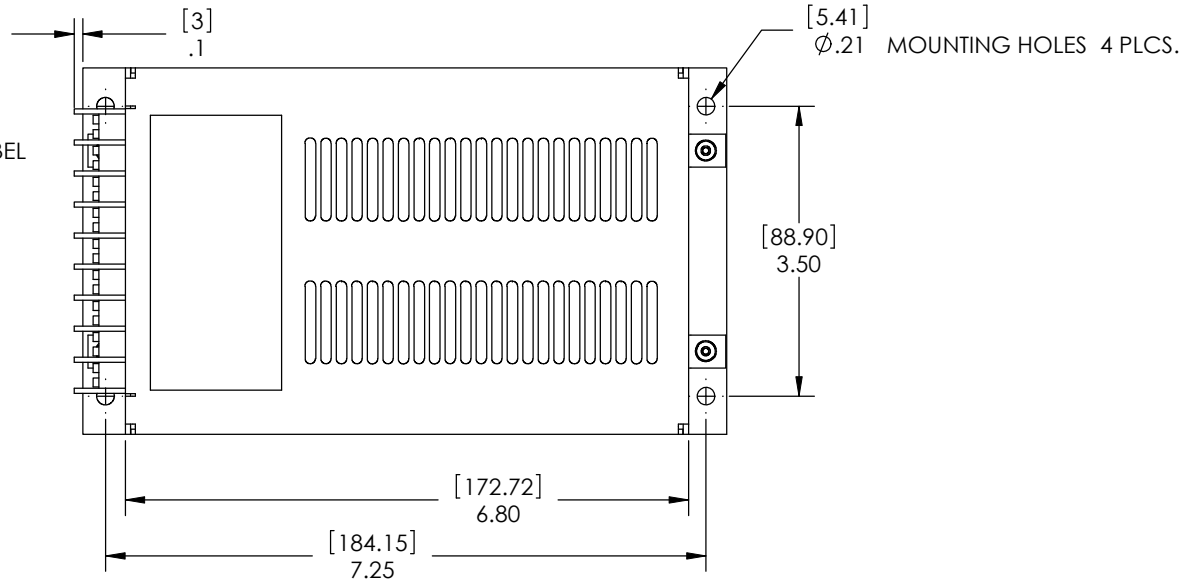
Customized versions are also available.

| Model   | Input Options V | Standard Outputs V A | Power W |
|---|-----------------|----------------------|---------|
| <b>DCW152R</b>  | 24V, 36V        | V1: 5...48V 8A max   | 150W    |
|   | 48V, 72V        | V2: 5...24V 4A max   |         |
|   | 96V, 110V       |                      |         |
| <ul style="list-style-type: none"> <li>• These <b>DCW152R</b> is manufactured to order with customer specifying the input / output voltage combinations.</li> <li>• Final part number will be allocated at time of order.</li> <li>• The units can be supplied with two isolated outputs that can be connected in series, or as a ± output with common return.</li> </ul> |                 |                      |         |

|                        |  |
|------------------------|--|
| <b>LED / Indicator</b> | Optional   |
| <b>Alarm output</b>    | Optional on some models  |
| <b>Connector</b>       | 6 pole barrier-type terminal block with 3/8" spacing. ( optional cover )         |
| <b>Dimensions</b>      | 112 x 52 x 201mm (F1)<br>W x H x L ( includes terminal block & mounting flanges) |
| <b>Weight</b>          | 0.8kg  |



CURTIS 38000 SERIES 9 POLE  
SINGLE ROW BARRIER TYPE  
TERMINAL WITH #6 UNC SCREWS



DIMENSIONS ARE IN INCHES  
(mm) TOLERANCES ON  
DECIMALS: XXX ± 0.008"  
                  XX ± 0.012"  
ANGLES: ± 2°  
FRACTIONS: ± 1/64"  
UNLESS OTHERWISE STATED

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